1348 EAST EDINGER
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Assembly hints for the 'Video Upgrade' kit

1) Check parts received against this parts list:-

IC 1	.... 74LS30	R 1	.... 10k	C 11	.... 0.047uF
IC 2	.... 74LS93	R 2	.... 470-ohms	C 3	.... 100pF
IC 3	.... 74LS00	R 3	.... 1k	C 6	.... 47pF
IC 4	.... 74LS93	R 4	.... 1k	C 7	.... 0.047uF
IC 5	.... 74LS32	R 5	.... 1k	C 8	.... 100pF
IC 6	.... 74LS00	R 6	.... 330 ohms	C 12	.... 47uF (optional)
IC 7	.... 74LS00	D 1,2	... 1N4148	C 1,2,13	.. 0.1uF
Q 1	..... 2N2369 (marked 014-581 612)			C 4,5,9,10,14	(NOT REQUIRED)

2m. of single core wire, 2 strips of double sided tape.

And of course, 1 printed circut board.

2) There are no special considerations when building the 'Video Upgrade' itself, the interesting bit comes later. The suggested order in which the parts are assembled are:-

(a) Intigrated circuts (ensure correct orientation)
(b) Resistors and diodes
(c) The transistor, be sure to mount it as far down on the PCB as possible without the can touching the PCB.
(d) Capacitors
(e) Mount all components as low as possible on the PCB.

3) Track cuts to be made on the MicroAce are between:-

(a) IC13 pin 5 ..... R33
(b) IC14 pin 2 ..... IC22 pin 3+4
(c) IC14 pin 1 ..... IC24 pin 1
(d) IC13 pin 5 ..... IC14 pin 1

4) Connections to be made on the MicroAce:-

Use the wire provided as it is single core and therefore (we feel) easier to use.

(a) IC14 pin 1 ..... R32+33
(b) IC24 pin 1 ..... IC13 pin 5
(c) A ..... IC15 pin 13 ; $\overline{\text{Ø}}$ 3.25MHz clock
(d) B ..... IC1 pin 31 ; A1
(e) C ..... IC1 pin 30 ; AØ

... continued ...

(f)	D	.....	R2 or IC1 pin 24	; $\overline{WAIT}$
(g)	E	.....	IC1 pin 17	; $\overline{NMI}$
(h)	F	.....	IC1 pin 18	; $\overline{HALT}$
(i)	G	.....	IC14 pin 1	; char. line clock
(j)	H	.....	IC14 pin 2+3	; char. line reset
(k)	I	.....	IC13 pin 5	; software sync.
(l)	J	.....	IC22 pin 4	;
(m)	K	.....	IC22 pin 5	; $\overline{IORQ}$ + $\overline{WR}$
(n)	L	.....	+5 volts	
(o)	M	.....	0 volts	

5) Track cuts to be made on the ZX80 are between:-

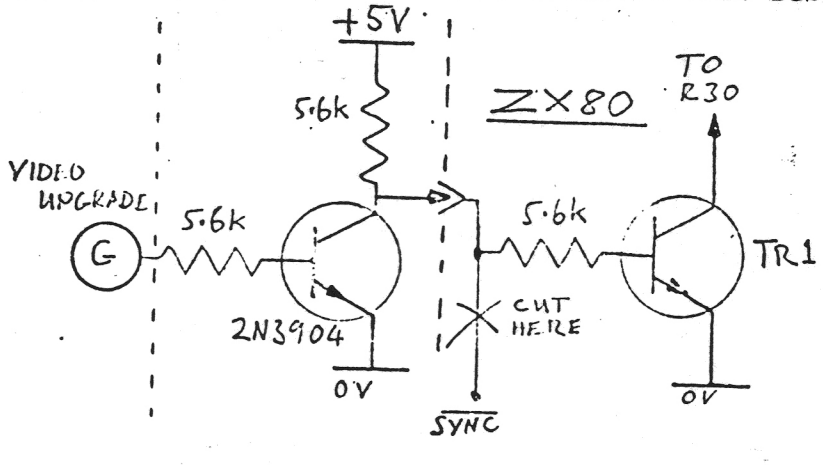
(a)	IC21 pin 1	.....	IC19 pin 5	
(b)	IC19 pin 5	.....	R32 + 35	; see paragraph 8
(c)	IC21 pin 2	.....	IC11 pin 11	

6) Connections to be made to the ZX80:-

(a)	IC21 pin 1	.....	R32+35	; see paragraph 8
(b)	A	.....	IC18 pin 8 or 12	; Ø 3.25MHz clock
(c)	B	.....	IC1 pin 31	; A1
(d)	C	.....	IC1 pin 30	; AØ
(e)	D	.....	IC1 pin 24	; $\overline{WAIT}$
(f)	E	.....	IC1 pin 17	; $\overline{NMI}$
(g)	F	.....	IC1 pin 18	; $\overline{HALT}$
(h)	G	.....	IC21 pin 1	; char. line clock
(i)	H	.....	IC21 pin 2+3	; char. line reset
(j)	I	.....	IC19 pin 5	; software sync.
(k)	J	.....	IC11 pin 10	;
(m)	K	.....	IC11 pin 9	; $\overline{IORQ}$ + $\overline{WR}$
(n)	L	.....	+5 volts	
(o)	M	.....	0 volts	

7) There are a couple of funnys with this add on, in particular the top line of display slants to the right slightly and R3 (1k) sometimes needs adjusting in value to centralize the 'K' inside the cursor! To rid the board of these funnys a total redesign would be needed, maybe later, but for now we wish you many hours of flicker free fun!

8) Some ZX80's have UHF modulators, some VHF, those with VHF need some extra mods done, those with UHF do not. The mod is from an article by John Strain in SYNTAX ZX80 Sept. '81.



VIDEO UPGRADE